YAMAHA

TTR250L(C)

300+1+1color

SERVICE MANUAL

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TTR250L(C)
SERVICE MANUAL

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EB001000

NOTICE

This manual was produced by the Yamaha Motor Company primarily for use by Yamaha dealers and their qualified mechanics. It is not possible to include all the knowledge of a mechanic in one manual, so it is assumed that anyone who uses this book to perform maintenance and repairs on Yamaha motorcycles has a basic understanding of the mechanical ideas and the procedures of motorcycle repair. Repairs attempted by anyone without this knowledge are likely to render the motorcycle unsafe and unfit for use.

Yamaha Motor Company, Ltd. is continually striving to improve all its models. Modifications and significant changes in specifications or procedures will be forwarded to all authorized Yamaha dealers and will appear in future editions of this manual where applicable.

NOTE:
Designs and specifications are subject to change without notice.

IMPORTANT INFORMATION

Particularly important information is distinguished in this manual by the following notations.

⚠ The Safety Alert Symbol means ATTENTION! BECOME ALERT! YOUR SAFETY IS INVOLVED!

⚠ WARNING Failure to follow WARNING instructions could result in severe injury or death to the motorcycle operator, a bystander or a person inspecting or repairing the motorcycle.

CAUTION: A CAUTION indicates special precautions that must be taken to avoid damage to the motorcycle.

NOTE: A NOTE provides key information to make procedures easier or clearer.

EB002000

HOW TO USE THIS MANUAL

MANUAL ORGANIZATION

This manual is intended as a handy, easy-to-read reference book for the mechanic. It is divided into chapters, sections and sub-sections. Comprehensive explanations of all installation, removal, disassembly, assembly, repair and inspection procedures are laid out with the individual steps in sequential order.

PAGE FEATURES

The circled numbers below refer to the features indicated in the sample page.

① : An abbreviation and symbol in the upper right corner of each page indicates the current chapter.

② : The current section title is shown at the top of each page.†

③ : Sub-section titles appear in smaller print than the section title.†

④ : Lines of asterisks (*) mark the beginning and end of a particularly important procedure. The steps of such procedures are marked with bullets (•).

⑤ : Important information such as fluids, special tools and torques are framed and marked with a corresponding symbol.

⑥ : A circled number refers to an illustrated part.

⑦ : A circled lower case letter refers to an illustrated dimension or alignment mark.

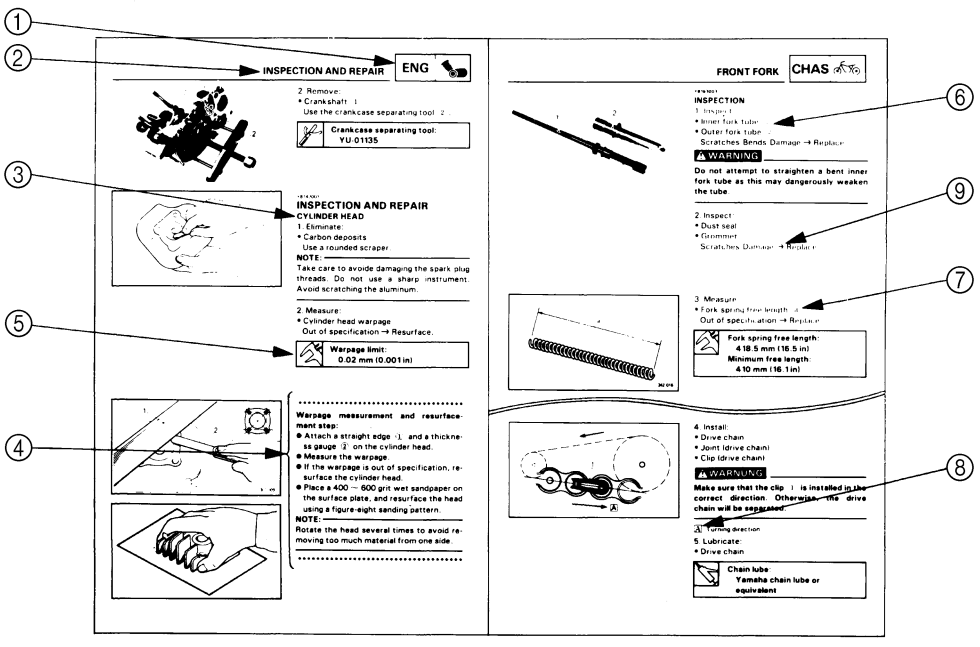
⑧ : An upper case letter in a box refers to other illustrated details.

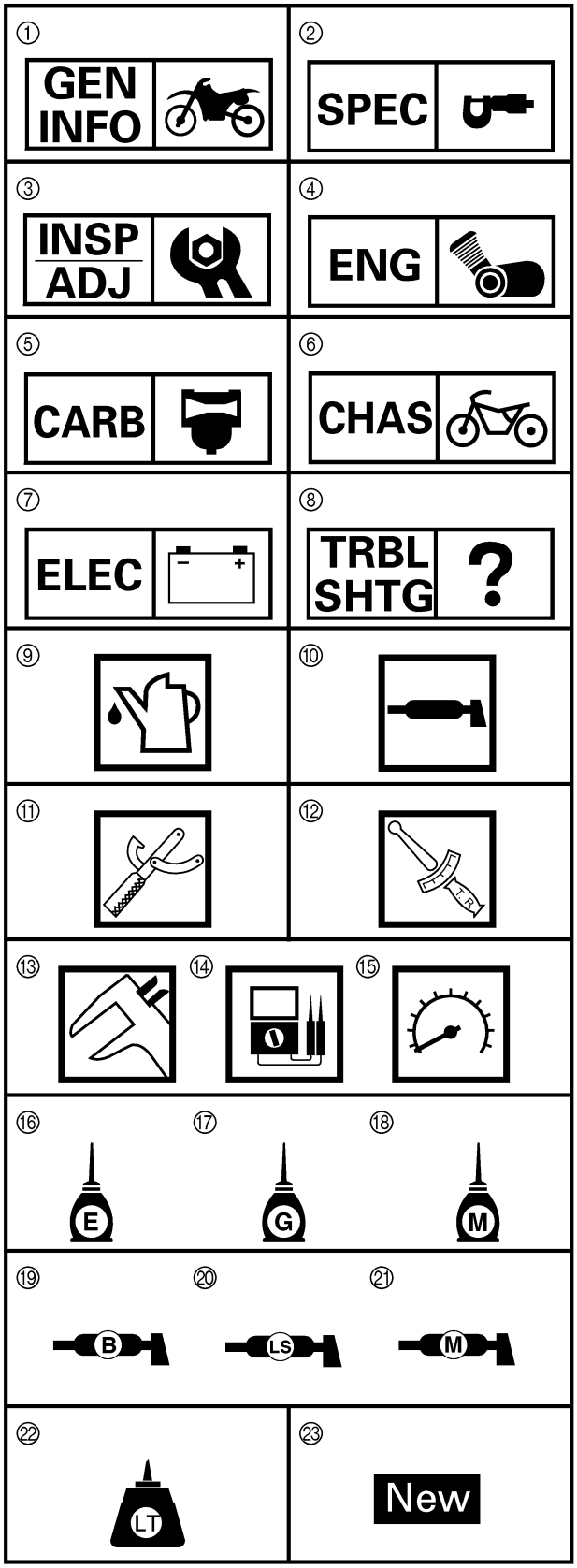
⑨ : An arrow mark after a given defect suggests the recommended course of action.

† : In Chapter 3, "Periodic Inspection and Adjustment", it is usually the current sub-section title that appears at the top of each page, instead of the current section title.

EXPLODED DIAGRAMS

To help identify parts and clarify procedure steps, there are exploded diagrams at the start of each disassembly section.





EB003000

ILLUSTRATED SYMBOLS

Illustrated symbols ① to ⑧ are printed on the top right of each page and indicate the subject of each chapter.

① General information
② Specifications
③ Periodic inspections and adjustments
④ Engine overhall
⑤ Carburetor
⑥ Chassis
⑦ Electrical
⑧ Troubleshooting

Illustrated symbols ⑨ to ⑮ are used to identify the specifications appearing in the text.

⑨ Filling fluid
⑩ Lubricant
⑪ Special tool
⑫ Torque
⑬ Wear limit, clearance
⑭ Engine speed
⑮ Ω, V, A

Illustrated symbols ⑯ to ㉑ in the exploded diagrams indicate the types of lubricants and lubrication points.

⑯ Apply engine oil
⑰ Apply gear oil
⑱ Apply molybdenum disulfide oil
⑲ Apply wheel bearing grease
⑳ Apply lightweight lithium-soap base grease
㉑ Apply molybdenum disulfide grease

Illustrated symbols ㉒ to ㉓ in the exploded diagrams indicate where to apply a locking agent ㉒ and when to install a new part ㉓.

㉒ Apply the locking agent (LOCTITE®)
㉓ Replace

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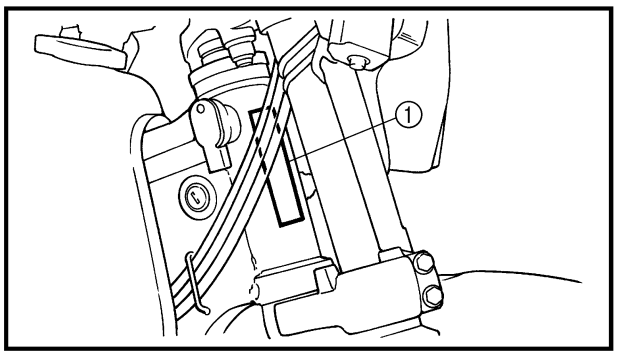
CHAPTER 5.
CARBURETOR

CHAPTER 6.
CHASSIS

CHAPTER 7.
ELECTRICAL

CHAPTER 8.
TROUBLESHOOTING



GENERAL INFORMATION

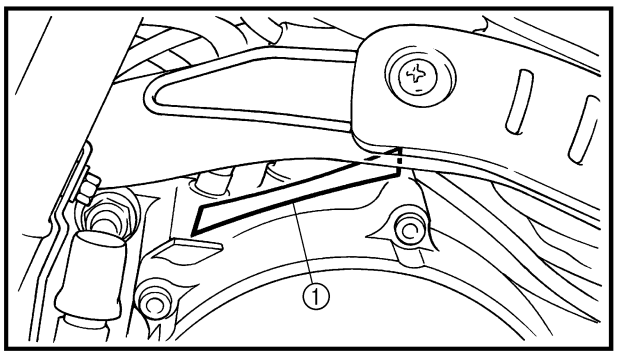
MOTORCYCLE IDENTIFICATION

VEHICLE IDENTIFICATION NUMBER

The vehicle identification number ① is stamped into the right side of the steering head.

NOTE:

The vehicle identification number is used to identify your motorcycle and may be used to register your motorcycle with the licensing authority in your state.



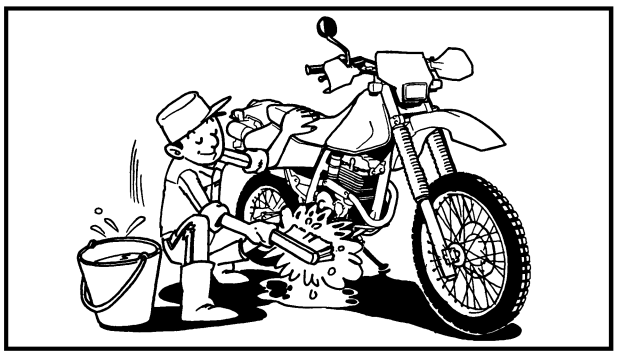
ENGINE SERIAL NUMBER

The engine serial number ① is stamped into the elevated part of the right rear section of the engine.

NOTE:

- The first three digits of these numbers are for model identifications; the remaining digits are the unit production number.
- Designs and specifications are subject to change without notice.

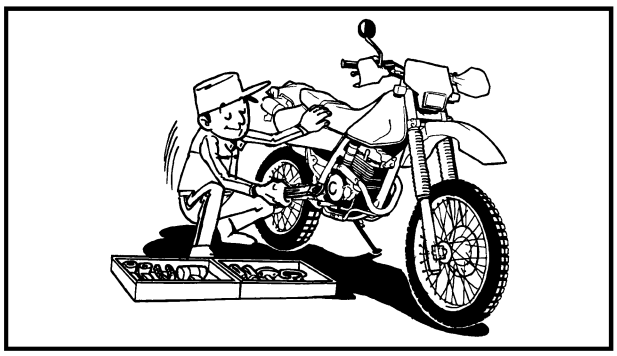
1



IMPORTANT INFORMATION

PREPARATION FOR REMOVAL AND DISASSEMBLY

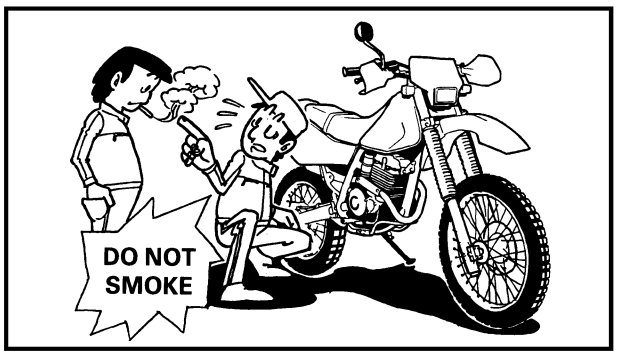
1.Remove all dirt, mud, dust, and foreign material before removing and disassembling.



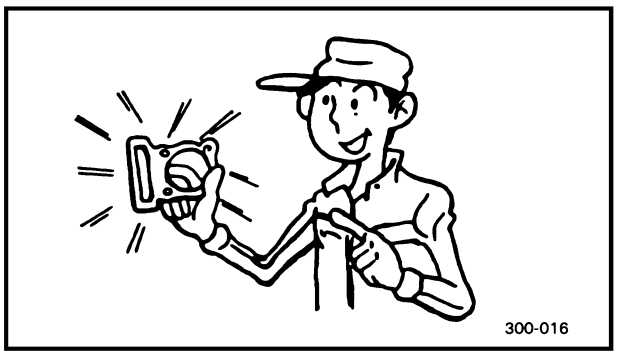
2.Use proper tools and cleaning equipment. Refer to "SPECIAL TOOLS".

3.When disassembling the motorcycle keep mated parts together. This includes gears, cylinder, piston and other mated parts that have been "mated" through normal wear. Mated parts must be reused as an assembly or replaced.

4.During the motorcycle disassembly, clean all parts and place them in trays in the order of disassembly. This will speed up assembly time and help assure that all parts are correctly reinstalled.



5.Keep away from fire.

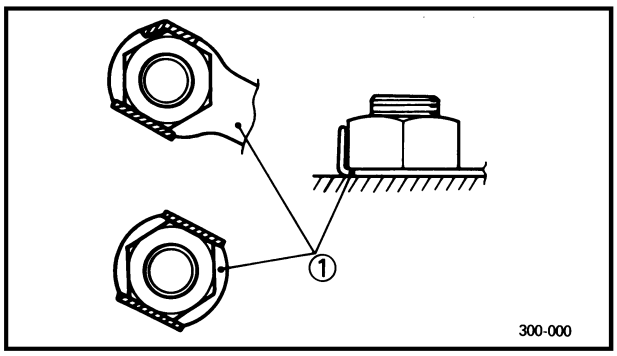


ALL REPLACEMENT PARTS

1. Use only genuine Yamaha parts for all replacements. Use oil and/or grease recommended by Yamaha for assembly and adjustment. Other brands may be similar in function and appearance, but inferior in quality.

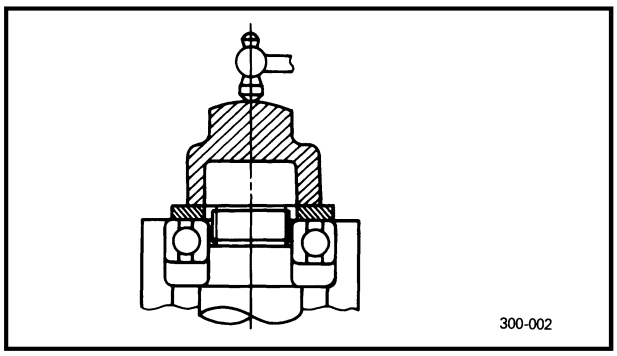
GASKETS, OIL SEALS, AND O-RINGS

1. All gaskets, seals and O-rings should be replaced when an engine is overhauled. All gasket surfaces oil seal lips and O-rings must be cleaned.
2. Properly oil all mating parts and bearings during reassembly. Apply grease to the oil seal lips.



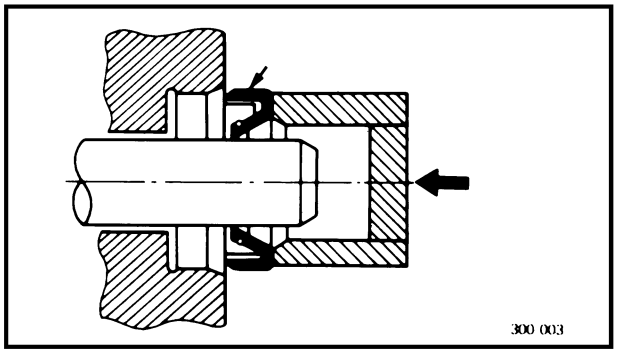
LOCK WASHERS/PLATES AND COTTER PINS

1. All lock washers/plates ① and cotter pins must be replaced when they are removed. Lock tab(s) should be bent along the bolt or nut flat(s) after the bolt or nut has been properly tightened.



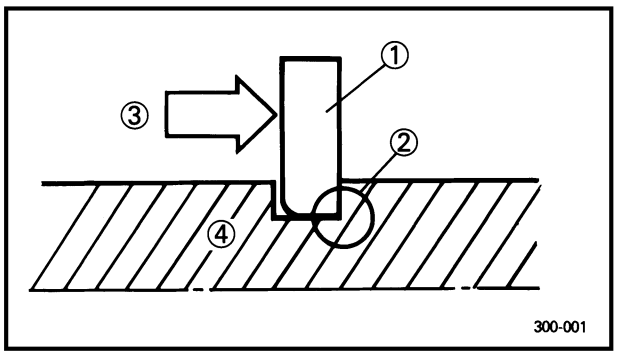
BEARINGS AND OIL SEALS

1. Install the bearing(s) ① and oil seal(s) ② with their manufacturer's marks or numbers facing outward. (In other words, the stamped letters must be on the side exposed to view.) When installing oil seal(s), apply a light coating of light-weight lithium base grease to the seal lip(s). Oil the bearings liberally when installing.



CAUTION:

Do not use compressed air to spin the bearings dry. This causes damage to the bearing surfaces.



CIRCLIPS

1. All circlips should be inspected carefully before reassembly. Always replace piston pin clips after one use. Replace distorted circlips. When installing a circlip ①, make sure that the sharp-edged corner ② is positioned opposite to the thrust ③ it receives. See the sectional view.

④ Shaft

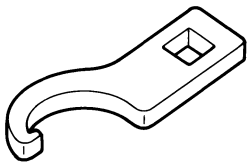
SPECIAL TOOLS

The proper special tools are necessary for complete and accurate tune-up and assembly. Using the correct special tool will help prevent damage caused by the use of improper tools or improvised techniques.

FOR TUNE UP

1

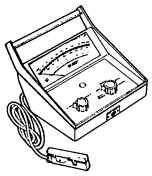
Steering nut wrench
P/N. YU-33975



This tool is used to adjust the spring preload of rear shock absorber.

2

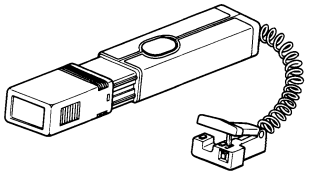
Inductive tachometer
P/N. YU-8036-A



This tool is needed for detecting engine r/min.

3

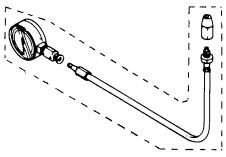
Inductive timing light
P/N. YM-33277-A



This tool is necessary for checking ignition timing.

4

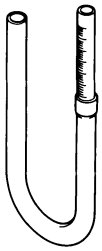
Compression gauge
P/N. YU-33223
Adapter (M12)
P/N. YU-33223-3



These gauges are used to measure the engine compression.

5

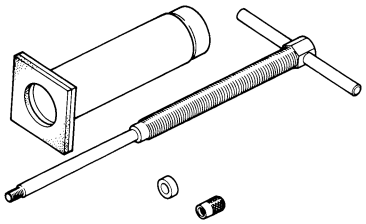
Fuel level gauge
P/N. YM-01312-A



This gauge is used to measure the fuel level in the float chamber.

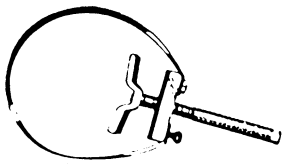
FOR ENGINE SERVICE

1
Piston pin puller
P/N. YU-01304



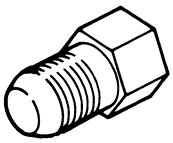
This tool is used to remove the piston pin.

2
Sheave holder
P/N. YS-01880



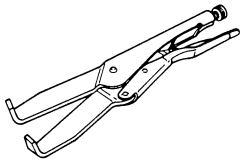
This tool is used to hold the rotor when removing or installing the rotor securing nut.

3
Rotor puller
P/N. 2K7-85555-00



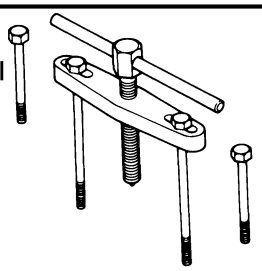
This tool is used to remove the rotor.

4
Universal clutch holder
P/N. YM-91042



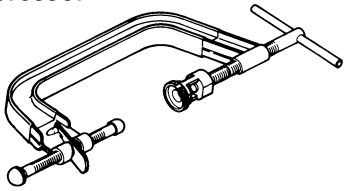
This tool is used to hold the clutch when removing or installing the clutch boss locknut.

5
Crankcase separating tool
P/N. YU-01135-A



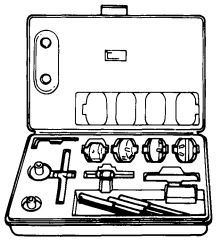
This tool is necessary to remove the crankshaft.

6
Valve spring compressor
P/N. YM-04019



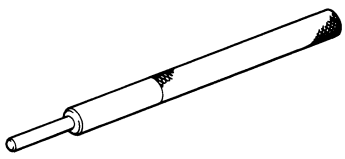
This tool is needed to remove and install the valve assemblies.

7
Valve seat cutter set
P/N. YM-91043



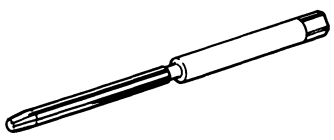
This tool is needed to resurface the valve seat.

8
Valve guide remover 5 mm (0.20 in)
P/N. YM-04097



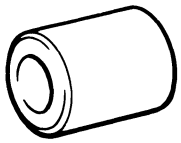
This tool is used to remove the valve guides.

9
Valve guide reamer 5 mm (0.20 in)
P/N. YM-04099



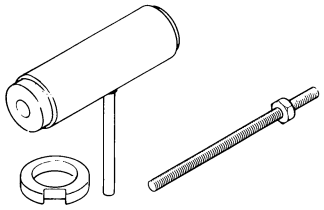
This tool is used to rebore the new valve guide.

10
Valve guide installer 5 mm (0.20 in)
P/N. YM-04098



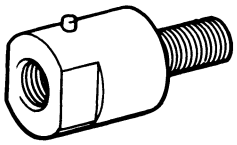
This tool is needed to install the valve guides properly.

11
Crankshaft installing set
P/N. YU-90050



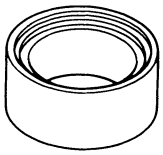
These tools are used to install the crankshaft.

12
Adapter (M10)
P/N. YU-90062



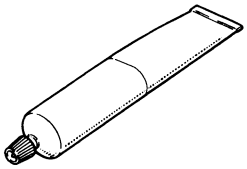
This tool is used to install the crankshaft.

13
Crank pot spacer
P/N. YU-01202



This tool is used to install the crankshaft.

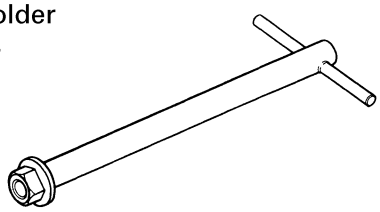
14
Quick Gasket®
P/N. ACC-11001-05-01



This sealant (bond) is used for crankcase mating surfaces, etc.

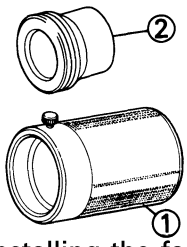
FOR CHASSIS SERVICE

1
Damper rod holder
P/N. YM-01418



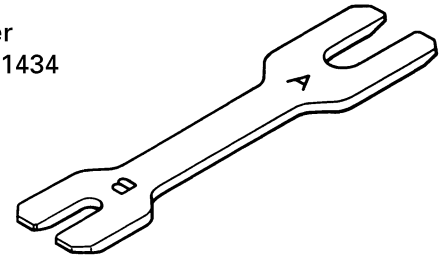
This tool is used to loosen and tighten the damper rod holding bolt.

2
Front fork seal drive weight
P/N. YM-33963-①
Adapter 43 mm (1.69 in)
P/N. YM-8020-②



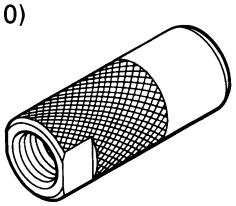
These tools are used when installing the fork oil seal.

3
Rod holder
P/N. YM-01434



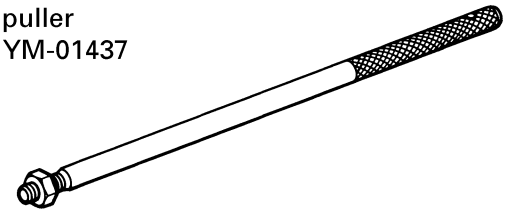
This tool is used to hold the fork spring.

4
Rod puller attachment (M10)
P/N. 90890-01436



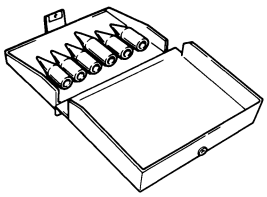
This tool is used to pull up the fork damper rod.

5
Rod puller
P/N. YM-01437



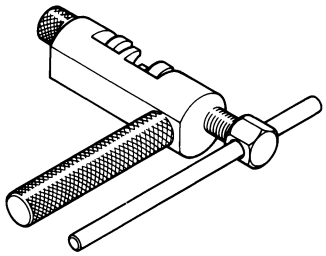
This tool is used to pull up the fork damper

6
Cylinder cup installer
P/N. 90890-01996



This tool is used to install the master cylinder kit.

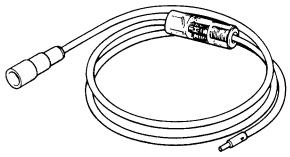
7
Drive chain cutter
P/N. YM-33858



This tool is used to cut and join the drive chain.

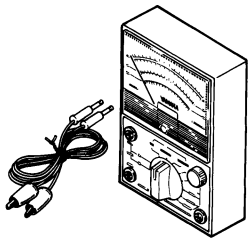
FOR ELECTRICAL COMPONENTS

1
Dynamic spark tester
P/N. YM-34487



This instrument is necessary for checking the ignition system components.

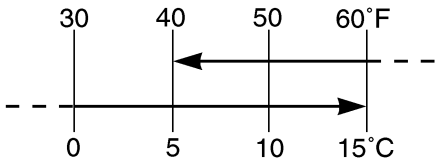
2
Pocket tester
P/N. YU-03112



This instrument is used for checking the electrical system.

SPECIFICATIONS

GENERAL SPECIFICATIONS

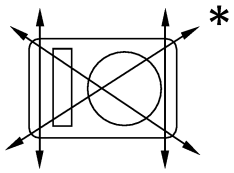
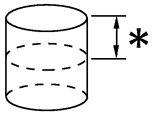
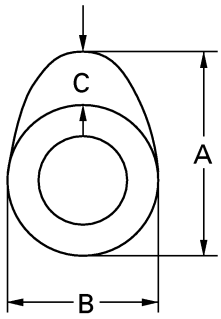
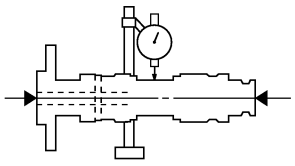
Model	TTR250L(C)
Model code:	5GF1 5GF2
Dimensions:	
Overall length	2,095 mm (82.5 in)
Overall width	835 mm (32.9 in)
Overall height	1,260 mm (49.6 in)
Seat height	915 mm (36.0 in)
Wheelbase	1,405 mm (55.3 in)
Minimum ground clearance	305 mm (12.0 in)
Minimum turning radius	2,200 mm (86.6 in)
Basic weight:	
With oil and full fuel tank	124 kg (273 lb)
Engine:	
Engine type	Air-cooled 4-stroke, DOHC
Cylinder arrangement	Forward-inclined single cylinder
Displacement	249 cm^3
Bore × stroke	73.0 × 59.6 mm (2.87 × 2.35 in)
Compression ratio	10.2 : 1
Compression pressure (STD)	1,200 kPa (12 kg/cm^2, 174 psi) at 300 r/min
Starting system	Electric starter
Lubrication system	Wet sump
Oil type or grade:	
Engine oil	 SAE 20W40 type SE motor oil SAE 10W30 type SE motor oil
Oil capacity:	
Engine oil	
Periodic oil change	1.10 L (0.97 Imp qt, 1.16 US qt)
With oil filter replacement	1.20 L (1.06 Imp qt, 1.27 US qt)
Total amount	1.45 L (1.28 Imp qt, 1.53 US qt)
Air filter:	Wet type element
Fuel:	
Type	Unleaded fuel only
Fuel tank capacity	10 L (2.20 Imp gal, 2.64 US gal)
Fuel reserve amount	2 L (0.44 Imp gal, 0.53 US gal)

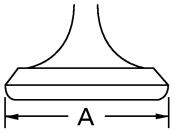
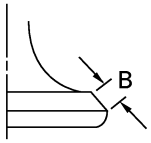
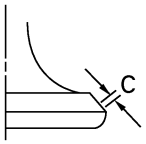
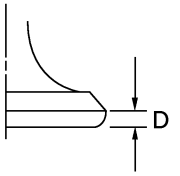
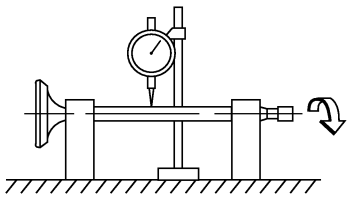
Model		TTR250L(C)
Carburetor:		
Type / quantity		Y30P/1
Manufacturer		TEIKEI
Spark plug:		
Type		CR9E/U27ESR-N
Manufacturer		NGK/DENSO
Spark plug gap		0.7 ~ 0.8 mm (0.028 ~ 0.031 in)
Clutch type:		Wet, multiple-disc
Transmission:		
Primary reduction system		Spur gear
Primary reduction ratio		74/24 (3.083)
Secondary reduction system		Chain drive
Secondary reduction ratio		52/13 (4.000)
Transmission type		Constant mesh 6-speed
Operation		Left foot operation
Gear ratio	1st	37/15 (2.466)
	2nd	29/16 (1.812)
	3rd	30/22 (1.363)
	4th	27/25 (1.080)
	5th	24/27 (0.888)
	6th	22/29 (0.758)
Chassis:		
Frame type		Semi double cradle
Caster angle		26°
Trail		108 mm (4.25 in)
Tire:		
Type		With tube
Size	front	80/100-21 51M
	rear	100/100-18 59M
Manufacturer	front	DUNLOP
	rear	DUNLOP
Type	front	D739F
	rear	D739
Tire pressure (cold tire):		
Maximum load-except motorcycle*		90 kg (198 lb)
Off-road riding*		
	front	100 kPa (1 kg/cm^2, 14.5 psi)
	rear	100 kPa (1 kg/cm^2, 14.5 psi)
*Load is total weight of rider, and accessories.		

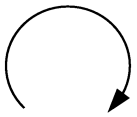
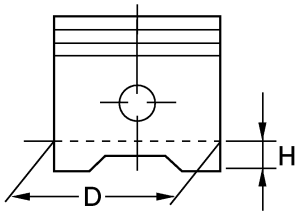
Model		TTR250L(C)
Brake:		
Front brake	type	Single disc brake
	operation	Right hand operation
Rear brake	type	Single disc brake
	operation	Right foot operation
Suspension:		
Front suspension		Telescopic fork
Rear suspension		Swingarm (link suspension)
Shock absorber:		
Front shock absorber		Coil-air spring / oil damper
Rear shock absorber		Coil spring / gas-oil damper
Wheel travel:		
Front wheel travel		280 mm (11.0 in)
Rear wheel travel		280 mm (11.0 in)
Electrical:		
Ignition system		C.D.I.
Generator system		A.C. magneto generator
Battery type		GT7B-4
Battery capacity		12 V 6.5 AH
Headlight type:		Quartz bulb (Halogen)
Bulb wattage × quantity:		
Headlight		12 V 35 W/36.5 W
Tail light		12 V 5 W/21 W

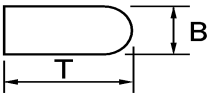
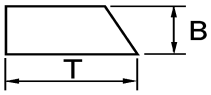
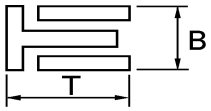
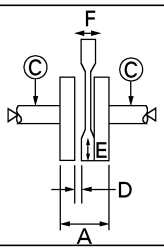
MAINTENANCE SPECIFICATIONS

ENGINE

Model	TTR250L(C)
Cylinder head:	
Volume	21.6 ~ 22.2 cm^3
<Warp limit> 	<0.03 mm (0.0012 in)> *Lines indicate straightedge measurement.
Cylinder:	
Material 	Aluminum alloy
Sleeve type	Sleeveless, surface honing
Bore size	72.97 ~ 73.02 mm (2.8728 ~ 2.8748 in)
*Measuring point	40 mm (1.57 in)
<Wear limit>	<73.1 mm (2.8779 in)>
<Warp limit>	<0.03 mm (0.0012 in)>
Camshaft:	
Drive method	Chain drive (right)
Cam cap inside diameter	24.500 ~ 24.521 mm (0.9646 ~ 0.9654 in)
Camshaft outside diameter	24.467 ~ 24.480 mm (0.9633 ~ 0.9638 in)
Shaft-to-cap clearance	0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in)
Cam dimensions	
Intake 	"A" <limit> "B" <limit> "C"
	32.75 ~ 32.85 mm (1.2894 ~ 1.2933 in) <32.7 mm (1.287 in)> 25.0 ~ 25.1 mm (0.9843 ~ 0.9882 in) <24.96 mm (0.983 in)> 7.8 mm (0.3071 in)
Exhaust	"A" <limit> "B" <limit> "C"
	32.75 ~ 32.85 mm (1.2894 ~ 1.2933 in) <32.7 mm (1.287 in)> 25.0 ~ 25.1 mm (0.9843 ~ 0.9882 in) <24.96 mm (0.983 in)> 7.8 mm (0.3071 in)
Camshaft runout limit 	0.03 mm (0.0012 in)
Camshaft oil clearance	0.020 ~ 0.054 mm (0.0008 ~ 0.0021 in)
<Limit>	<0.08 mm (0.0031 in)>
Cam chain:	
Cam chain type / No. of links	82RH2010-122M/122
Cam chain adjustment method	Automatic

Model		TTR250L(C)
Valve, valve seat, valve guide:		
Valve clearance (cold)	IN	0.09 ~ 0.19 mm (0.004 ~ 0.007 in)
	EX	0.19 ~ 0.27 mm (0.007 ~ 0.011 in)
Valve dimensions:		
 Head Diameter		 Face Width
 Seat Width		 Margin Thickness
"A" head diameter	IN	28.4 ~ 28.6 mm (1.118 ~ 1.126 in)
	EX	23.9 ~ 24.1 mm (0.941 ~ 0.949 in)
"B" face width	IN	2.26 mm (0.089 in)
	EX	2.26 mm (0.089 in)
"C" seat width	IN	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
	EX	0.9 ~ 1.1 mm (0.035 ~ 0.043 in)
"D" margin thickness	IN	0.6 ~ 1.0 mm (0.024 ~ 0.039 in)
	EX	0.8 ~ 1.2 mm (0.031 ~ 0.047 in)
Stem outside diameter	IN	4.975 ~ 4.990 mm (0.1959 ~ 0.1965 in)
	EX	4.960 ~ 4.975 mm (0.1953 ~ 0.1959 in)
<Limit>	IN	<4.95 mm (0.195 in)>
	EX	<4.94 mm (0.194 in)>
Guide inside diameter	IN	5.000 ~ 5.012 mm (0.1969 ~ 0.1973 in)
	EX	5.000 ~ 5.012 mm (0.1969 ~ 0.1973 in)
<Limit>	IN	<5.03 mm (0.198 in)>
	EX	<5.03 mm (0.198 in)>
Stem-to-guide clearance	IN	0.010 ~ 0.037 mm (0.0004 ~ 0.0015 in)
	EX	0.025 ~ 0.052 mm (0.0010 ~ 0.0020 in)
<Limit>	IN	<0.08 mm (0.003 in)>
	EX	<0.1 mm (0.004 in)>
<Stem runout limit>		<0.01 mm (0.0004 in)>
		
Valve face material		Stellite
Valve seat width	IN	0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)
	EX	0.9 ~ 1.1 mm (0.0354 ~ 0.0433 in)
<Limit>	IN	<1.6 mm (0.06 in)>
	EX	<1.6 mm (0.06 in)>

Model		TTR250L(C)
Valve spring:		
Free length	IN	35.59 mm (1.40 in)
	EX	35.59 mm (1.40 in)
<Limit>	IN	<33.81 mm (1.33 in)>
	EX	<33.81mm (1.33 in)>
Spring rate	IN-K1	18.9 N/mm (1.93 kg/mm, 107.92 lb/in)
	IN-K2	24.5 N/mm (2.50 kg/mm, 139.9 lb/in)
	EX-K1	18.9 N/mm (1.93 kg/mm, 107.92 lb/in)
	EX-K2	24.5 N/mm (2.50 kg/mm, 139.9 lb/in)
Set length (valve closed)	IN	30.39 mm (1.2 in)
	EX	30.39 mm (1.2 in)
Compressed pressure (installed)	IN	9.3 ~ 10.7 kg (20.50 ~ 23.58 lb)
	EX	9.3 ~ 10.7 kg (20.50 ~ 23.58 lb)
<Tilt limit>	IN	<2.5° / 1.6 mm (2.5° / 0.063 in)>
	EX	<2.5° / 1.6 mm (2.5° / 0.063 in)>
Direction of winding (top view)	IN	Clockwise
	EX	Clockwise 
Valve lifter outside diameter	IN	22.476 ~ 22.500 mm (0.88 ~ 0.89 in)
<Limit>	IN	<22.451 mm (0.88 in)>
Piston:		
Piston part number		4GY-11631-00
Piston to cylinder clearance		0.04 ~ 0.06 mm (0.0016 ~ 0.0024 in)
<Limit>		<0.15 mm (0.0059 in)>
Piston size “D” 		72.92 ~ 72.97 mm (2.8709 ~ 2.8728 in)
Measuring point “H”		1 mm (0.039 in)
Piston off-set		0.5 mm (0.020 in)
Piston off-set direction		In side
Piston pin bore inside diameter		18.004 ~ 18.015 mm (0.7088 ~ 0.7093 in)
<Limit>		<18.045 mm (0.71 in)>
Piston pin outside diameter		17.991 ~ 18.000 mm (0.7083 ~ 0.7087 in)
<Limit>		<17.976 mm (0.71 in)>

Model	TTR250L(C)
Piston rings:	
Top ring	
Type 	Barrel
Dimensions (B × T)	1.0 × 3.1 mm (0.039 × 0.122 in)
End gap (installed)	0.20 ~ 0.35 mm (0.008 ~ 0.014 in)
<Limit>	<0.4 mm (0.016 in)>
Side clearance (installed)	0.04 ~ 0.08 mm (0.0016 ~ 0.0031 in)
<Limit>	<0.12 mm (0.005 in)>
Plating/coating	Chrome plated/parkerizing
2nd ring:	
Type 	Taper
Dimensions (B × T)	1.0 × 3.1 mm (0.039 × 0.122 in)
End gap (installed)	0.20 ~ 0.35 mm (0.008 ~ 0.014 in)
<Limit>	<0.4 mm (0.016 in)>
Side clearance	0.03 ~ 0.07 mm (0.001 ~ 0.003 in)
<Limit>	<0.12 mm (0.005 in)>
Plating/coating	Parkerizing
Oil ring:	
Dimensions (B × T) 	2.0 × 2.5 mm (0.079 × 0.098 in)
End gap (installed)	0.2 ~ 0.7 mm (0.008 ~ 0.028 in)
Side clearance	0.060 ~ 0.155 mm (0.002 ~ 0.006 in)
Plating/coating	Chrome plated/parkerizing
Connecting rod:	
Connecting rod length	102.4 ~ 102.6 mm (4.03 ~ 4.04 in)
Crankshaft:	
Crank width "A" 	60.25 ~ 60.30 mm (2.372 ~ 2.374 in)
<Runout limit "C">	<0.03 mm (0.0012 in)>
Big end side clearance "D"	0.35 ~ 0.85 mm (0.014 ~ 0.033 in)
Big end radial clearance "E"	0.010 ~ 0.025 mm (0.0004 ~ 0.0010 in)
Small end free play "F"	0.8 mm (0.0315 in)
Balancer:	
Balancer drive method	Gear
Clutch:	
Friction plate thickness	2.9 ~ 3.1 mm (0.114 ~ 0.122 in)
Quantity	7 pcs
<Friction plate wear limit>	<2.7 mm (0.11 in)>
Clutch plate thickness	1.5 ~ 1.7 mm (0.059 ~ 0.067 in)
Quantity	6 pcs
<Warp limit>	<0.05 mm (0.002 in)>
Clutch spring free length	42.8 mm (1.69 in)
Quantity	5 pcs
Minimum length	40.8 mm (1.61 in)
Clutch housing thrust clearance	0.08 ~ 0.33 mm (0.003 ~ 0.013 in)
Clutch housing radial clearance	0.010 ~ 0.044 mm (0.0004 ~ 0.0017 in)

Model		TTR250L(C)
Clutch release method		Inner push, cam push
<Push rod bending limit>		<0.5 mm (0.020 in)>
Transmission:		
<Main axle deflection limit>		<0.08 mm (0.003 in)>
<Drive axle deflection limit>		<0.08 mm (0.003 in)>
Shifter:		
Shifter type		Cam drum and guide bar
Shift fork thickness		4.76 ~ 4.89 mm (0.1874 ~ 0.1925 in)
Air filter oil grade:		Foam-air-filter oil or SAE 10W30 type SE motor oil
Carburetor:		
I.D. mark		5GF1 00
Main jet	(M.J)	#137
Main air jet	(M.A.J)	1.0
Jet needle	(J.N)	5C9C-3/5
Needle jet	(N.J)	2.595 (V95)
Cutaway	(C.A)	4.0
Pilot air jet	(P.A.J.1)	1.2
Pilot outlet	(P.O)	0.8
Pilot jet	(P.J)	#52
Bypass 1	(B.P.1)	1.0 × 2
Pilot screw	(P.S)	1-1/2
Valve seat size	(V.S)	2.0
Starter jet	(G.S.1)	#66
Starter jet	(G.S.2)	2.0
Float height	(F.H)	26.5 ~ 27.5 mm (1.04 ~ 1.08 in)
Fuel level	(F.L)	7.5 ~ 9.5 mm (0.30 ~ 0.37 in)
Engine idle speed		1,250 ~ 1,350 r/min
Intake vacuum		24.0 ~ 29.3 kPa (180 ~ 220 mmHg, 7.087 ~ 8.652 inHg)
Oil temperature		55 ~ 65 ˚C (131 ~ 149 ˚F)
Lubrication system:		
Oil filter type		Wire mesh type
Oil pump type		Trochoid type
Tip clearance “A” or “B”		0.15 mm (0.006 in)
<Limit>		<0.2 mm (0.008 in)>
Side clearance		0.10 ~ 0.15 mm (0.004 ~ 0.006 in)
<Limit>		<0.2 mm (0.008 in)>
Housing and rotor clearance		0.04 ~ 0.09 mm (0.002 ~ 0.004 in)
<Limit>		<0.15 mm (0.006 in)>
Oil pressure (hot)		100 kPa (1 kg/cm^2, 14.22 psi) at 1,300 r/min
Pressure check location		Crankcase cover 3

TIGHTENING TORQUES

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Cylinder head (camshaft cap)	Flange bolt	M6	8	10	1.0	7.2	
Spark plug	–	M10S	1	13	1.3	9.4	
Cylinder head (exhaust pipe)	Stud bolt	M10	2	20	2.0	14	
Cylinder head	Flange bolt	M10	4	40	4.0	29	
Cylinder head	Flange bolt	M6	2	10	1.0	7.2	
Cylinder head	Nut	M8	2	20	2.0	14	
Cylinder head cover	Bolt	M6	3	10	1.0	7.2	
Flywheel magneto	Flange bolt	M10	1	60	6.0	43	
Camshaft sprocket	Flange bolt	M7	4	24	2.4	17	
Camshaft cap	Flange bolt	M6	8	8	0.8	5.8	
Timing chain damper 2	Bolt	M6	2	8	0.8	5.8	LT
Stopper guide	Panhead screw	M6	1	7	0.7	5.1	
Oil pump assembly	Panhead screw	M6	3	6	0.6	4.3	LT
Drain bolt (oil filter)	Bolt	M6	1	10	1.0	7.2	
Oil check bolt	Bolt	M6	1	7	0.7	5.1	
Plug (oil cooler)	Plug	M12	3	32	3.2	23	
Oil delivery pipe	Union bolt	M10	2	20	2.0	14	
Oil delivery pipe	Union bolt	M8	1	18	1.8	13	
Relief valve stay	Flange bolt	M6	1	10	1.0	7.2	LT
Carburetor joint (front)	Hose clamp	M4	1	2	0.2	1.4	
Carburetor joint (air filter assembly)	Hose clamp	M5	1	5	0.5	3.6	
Air filter case assembly	Bolt with washer	M6	3	5	0.5	3.6	
Exhaust pipe (cylinder head)	Nut	M8	2	7	0.7	5.1	
Exhaust pipe (muffler)	Flange bolt	M8	1	20	2.0	14	
Muffler	Bolt	M8	2	40	4.0	29	
Spark arrester	Bolt	M6	3	7	0.7	5.1	
Muffler purging bolt	Bolt	M8	1	20	2.0	14	LT
Muffler protector	Screw	M6	2	7	0.7	5.1	
Crankcase assembly	Bolt	M6	11	10	1.0	7.2	
Crankcase cover 1	Bolt	M6	8	10	1.0	7.2	
Crankcase cover 2 (starter motor cover)	Bolt	M6	5	10	1.0	7.2	
Crankcase cover 3	Bolt	M6	10	10	1.0	7.2	
One-way clutch	Bolt	M6	6	10	1.0	7.2	LT
Primary drive gear	Nut	M16	1	80	8.0	58	
Clutch boss	Nut	M16	1	75	7.5	54	
Pressure plate	Screw with washer	M6	5	8	0.8	5.8	

Part to be tightened	Part name	Thread size	Q'ty	Tightening torque			Remarks
				Nm	m·kg	ft·lb	
Push rod 2	Nut	M6	1	8	0.8	5.8	
Push lever	Screw	M8	1	12	1.2	8.7	
Clutch cable holder	Flange bolt	M6	2	10	1.0	7.2	
Drive sprocket	Nut	M18	1	110	11.0	80	
Lever stopper	Bolt	M6	1	10	1.0	7.2	LT
Shift pedal	Bolt	M6	1	10	1.0	7.2	
Starter motor	Flange bolt	M6	2	10	1.0	7.2	
Drain plug	Straight screw plug	M12	1	20	2.0	14	
Stator coil	Bolt	M5	3	7	0.7	5.1	LT